

**ABSTRACT**

A high resolution scanning electron microscope collects secondary Auger electrons through its objective lens to sensitively determine the chemical make-up with extremely fine positional resolution. The system uses a magnetic high resolution objective lens, such as a snorkel lens or a dual pole magnetic lens which provides an outstanding primary electron beam performance. The Auger electrons are deflected from the path of the primary beam by a transfer spherical capacitor. The primary beam is shielded, by a tube or plates, as it traverses the spherical capacitor to prevent aberration of the primary beam and the external wall of the shield maintains a potential gradient related to that of the spherical capacitor to reduce aberration of the primary electron beam. The coaxial configuration of the primary electron beam and the collected secondary electron beam allows the Auger image to coincide with the SEM view.